

BRIEF NOTE ON LIVE STORAGE STATUS OF 91 RESERVOIRS IN THE COUNTRY (WITH REFERENCE TO RESERVOIR STORAGE BULLETIN OF 22.12.2016)

1. ALL INDIA STATUS

Central Water Commission is monitoring live storage status of 91 reservoirs of the country on weekly basis and is issuing weekly bulletin on every Thursday. Out of these reservoirs, 37 reservoirs have hydropower benefit with installed capacity of more than 60 MW. The total live storage capacity of these 91 reservoirs is 157.799 BCM which is about 62% of the live storage capacity of 253.388 BCM which is estimated to have been created in the country. As per reservoir storage bulletin dated **22.12.2016**, live storage available in these reservoirs is **95.342 BCM**, which is **60%** of total live storage capacity of these reservoirs. However, last year the live storage available in these reservoirs for the corresponding period was **75.470 BCM** and the average of last 10 years live storage was **96.951 BCM**. Thus, the live storage available in 91 reservoirs **as per 22.12.2016 Bulletin** is **126%** of the live storage of corresponding period of last year and **98%** of storage of average of last ten years.

The overall storage position is **better than the** corresponding period of last year in the country as a whole but is **less than the** average storage of last ten years during the corresponding period.

2. REGION WISE STORAGE STATUS:

a) NORTHERN REGION

The northern region includes States of Himachal Pradesh, Punjab and Rajasthan. There are 6 reservoirs under CWC monitoring having total live storage capacity of 18.01 BCM. As per Reservoir Storage Bulletin dated **22.12.2016**, the total live storage available in these reservoirs is **9.05 BCM** which is **50%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **58%** and average storage of last ten years during corresponding period was **59%** of live storage capacity of these reservoirs. Thus, storage during current year is less than the corresponding period of last year and is also less than the average storage of last ten years during the corresponding period.

b) EASTERN REGION

The Eastern region includes States of Jharkhand, Odisha, West Bengal and Tripura. There are 15 reservoirs under CWC monitoring having total live storage capacity of 18.83 BCM. As per Reservoir Storage Bulletin dated **22.12.2016**, the total live storage available in these reservoirs is **15.06 BCM** which is **80%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **59%** and average storage of last ten years during corresponding period was **68%** of live storage capacity of these reservoirs. Thus, storage during current year is better than the corresponding period of last year and is also better than the average storage of last ten years during the corresponding period.

c) WESTERN REGION

The Western region includes States of Gujarat and Maharashtra. There are 27 reservoirs under CWC monitoring having total live storage capacity of 27.07 BCM. As per Reservoir Storage Bulletin dated **22.12.2016**, the total live storage available in these reservoirs is **19.55 BCM** which is **72%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **43%** and average storage of last ten years during corresponding period was **67%** of live storage capacity of these reservoirs. Thus, storage during current year is better than the storage of last year and is also better than the average storage of last ten years during the corresponding period.

d) CENTRAL REGION

The Central region includes States of Uttar Pradesh, Uttarakhand, Madhya Pradesh and Chhattisgarh. There are 12 reservoirs under CWC monitoring having total live storage capacity of 42.30 BCM. As per Reservoir Storage Bulletin dated **22.12.2016**, the total live storage available in these reservoirs is **32.27 BCM** which is **76%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **59%** and average storage of last ten years during corresponding period was **56%** of live storage capacity of these reservoirs. Thus, storage during current year is better than the storage of last year and is also better than the average storage of last ten years during the corresponding period.

e) SOUTHERN REGION

The Southern region includes States of Andhra Pradesh, Telangana, AP&TG (2 combined projects in both states) Karnataka, Kerala and Tamil Nadu. There are 31 reservoirs under CWC monitoring having total live storage capacity of 51.59 BCM. As per Reservoir Storage Bulletin dated **22.12.2016**, the total live storage available in these reservoirs is **19.41 BCM** which is **38%** of total live storage capacity of these reservoirs. The storage during corresponding period of last year was **33%** and average storage of last ten years during corresponding period was **61%** of live storage capacity of these reservoirs. Thus, storage during current year is better than the corresponding period of last year but is less than the average storage of last ten years during the corresponding period.

The region wise and reservoir wise details are given in the following pages of the Bulletin.

BROAD ANALYSIS OF OTHER TABLES IN THE BULLETIN

- Normal storage means average storage of last ten years, Close to normal storage means where shortfall is upto 20% of normal, deficient storage is where shortfall is more than 20% of the normal and upto 60% of the normal, highly deficient means where shortfall is more than 60% of normal.
- In the table on page 4, better than normal storage is available in Narmada, Mahi, , Ganga, Sabarmati, Godavari, Tapi and Mahanadi & neighbouring East Flowing Rivers. NIL in Close to Normal and Deficient in Indus, Rivers of Kutch, West Flowing Rivers of South and Krishna and Highly Deficient in Cauvery & neighbouring EFRs Basin.
- Table on page 5-7 of the bulletin. The numbers of reservoirs having storage more than last year are **58** and reservoirs having storage more than average of last ten years are **45** The numbers of reservoirs having storage less than 20% with respect to last year is **5** and having storage less than 20% with reference to average of last ten years is **9** The number of reservoirs having storage less than or equal to 50% with respect to last year are **13** and having storage less than or equal to 50% with reference to average of last ten years are **19**.

STORAGE STATUS OF IMPORTANT RESERVOIRS IN THE COUNTRY

AS ON 22.12.2016

- 1 Central Water Commission is monitoring storage status of 91 important reservoirs spread all over the country, in which **37** reservoirs have hydropower benefit each with installed capacity of more than 60 MW. These reservoirs are identified thus(*) in the enclosed weekly report.
- 2 The total live storage in 91 important reservoirs in different parts of the country, monitored by CWC as on **22.12.2016** is **95.342** BCM (**60** percent of the live storage capacity at FRL).The current year's storage is nearly **126** percent of last year's storage and **98** percent of the average of last ten years.

3 Region wise storage status:-

REGION (Monitoring No. of Reservoirs)	Filling position of 91 reservoirs w.r.t. FRL								Departure from Normal storage		
	100%	91%-99%	81%-90%	71%-80%	61%-70%	51%-60%	41%-50%	40% & below			
NORTH (HP,Punjab & Rajasthan), (6 Resv.)	-	-	1	1	-	-	3	1	H.P.	-22 %	
									PUNJAB	-16 %	
									RAJASTHAN	14 %	
EAST (Jharkhand,Odisha, Tripura & W.Bengal (15 Resv.)	3	2	2	4	1	1	1	1	JHARKHAND	21 %	
									ODISHA	16 %	
									W. BENGAL	35 %	
									TRIPURA	97 %	
WEST (Guj.& Mah.), (27 Resv.)	-	4	5	8	1	4	1	4	GUJARAT	5 %	
									MAH.	9 %	
CENTRAL (MP,UP,Uttarakhand & Chh.), (12 Resv)	-	1	2	5	2	1	1	-	U.P.	55 %	
									UTTARAKHAND	-7 %	
									M.P.	45 %	
									CHHATISGARH	14 %	
SOUTH (Karnataka,TN,AP&TG,AP, TG, & Kerala), (31 Resv.)	-	2	1	-	1	5	2	20	AP&TG	-47 %	
									A,P	-25 %	
									TG	74 %	
									KARNATAKA	-39 %	
									KERALA	-38 %	
									T.N.	-81 %	
Status of 91 reservoirs	3	9	11	18	5	11	8	26			

4 Basin wise storage position:

Better than normal: Ganga,Sabarmati,Godavari,Mahi, Narmada ,Tapi and Mahanadi & Neighbouring EFRS.

Close to normal: NIL

Deficient: Indus ,Rivers of Kutch,West Flowing Rivers of South and Krishna.

Highly deficient: Cauvery & neighbouring EFRS.

- 5 Out of 91 reservoirs, **60** reservoirs reported more than 80% of normal storage & **31** reservoirs reported 80% or below of normal storage. Out of these **31** reservoirs **19** having storage upto 50% of normal storage.

Name of reservoir	%	Name of reservoir	%
SHOLAYAR	0	HEMAVATHY	29
VAIGAI	5	BHADRA	39
ALIYAR	10	MALAPRABHA(RENUKA)	42
TUNGABHADRA	13	MALAMPUZHA	44
BHADAR	15	NARAYANPUR	46
PERIYAR	18	DANTIWADA	46
METTUR(STANLEY)	19	KALLADA(PARAPPAR)	48
LOWER BHAWANI	20		
KRISHNARAJA SAGRA	20		
VANIVILAS SAGAR	21		
NAGARJUNA SAGAR	22		
PARAMBIKULAM	25		

12 reservoirs having storage 51% to 80% of normal storage.		
51% to 60%	61% to 70%	71% to 80%
1	4	7

- 6 Out of **37** reservoirs with significant(*) hydropower generation, the storage build up is less than or equal to normal in

19 reservoirs.

NOTE : **Normal:** Average of previous ten years, **Close to normal:** Where shortfall is up to 20% of the normal, **Deficient:** Where shortfall is more than 20% of the normal and up to 60% of the normal, **Highly deficient** : Where shortfall is more than 60% of the normal

WEEKLY REPORT - BASINWISE

GOVERNMENT OF INDIA

CENTRAL WATER COMMISSION

WEEK ENDING :- 22.12.2016

NAME OF BASIN	LIVE CAP. AT FRL	THIS YEAR'S STORAGE		LAST YEAR'S STORAGE		LAST 10 YEARS' AVG. STORAGE		% DEPARTURE W.R.T. AVE. OF 10 YEARS'
GANGA	28.096	20.548	73.13%	15.076	53.66%	14.795	52.66%	38.88
INDUS	14.730	6.792	46.11%	8.725	59.23%	8.642	58.67%	-21.41
NARMADA	17.414	13.380	76.83%	11.154	64.05%	10.746	61.71%	24.51
TAPI	7.394	5.848	79.09%	3.809	51.51%	5.041	68.18%	16.01
MAHI	4.012	3.118	77.72%	2.223	55.41%	2.622	65.35%	18.92
SABARMATI	0.735	0.555	75.51%	0.488	66.39%	0.416	56.60%	33.41
RIVERS OF KUTCH	0.887	0.241	27.17%	0.555	62.57%	0.441	49.72%	-45.35
GODAVARI	15.394	11.359	73.79%	5.869	38.13%	9.079	58.98%	25.11
KRISHNA	32.831	13.005	39.61%	6.775	20.64%	19.958	60.79%	-34.84
MAHANADI & NEIGHBOURING EFRS	13.181	10.805	81.97%	7.390	56.07%	9.523	72.25%	13.46
CAUVERY & NEIGHBOURING EFRS	8.359	1.958	23.42%	5.109	61.12%	5.091	60.90%	-61.54
WEST FLOWING RIVERS OF SOUTH	14.766	7.733	52.37%	8.297	56.19%	10.597	71.77%	-27.03
TOTAL	157.799	95.342		75.470		96.951		
PERCENTAGE								-1.66

WEEKLY REPORT OF 91 IMPORTANT RESERVOIRS OF INDIA

GOVERNMENT OF INDIA

CENTRAL WATER COMMISSION

WEEK ENDING :- 22.12.2016

S. NO	NAME OF RESERVOIR	FRL (m)	CURRENT RESERVOIR LEVEL (m)	LIVE CAPACITY AT FRL (BCM)	CURRENT LIVE STORAGE (BCM)	DATE	STORAGE AS % OF LIVE CAPACITY AT FRL			BENEFITS	
							CURRENT YEAR	LAST YEAR	LAST 10 YEARS AVERAGE	IRR. (CCA) IN TH. HA	HYDEL IN MW
1	2	4	6	5	7	8	9	10	11	3A	3B
NORTHERN REGION											
<u>HIMACHAL PRADESH</u>											
*1	GOBIND SAGAR(BHAKRA)	512.06	490.43	6.229	2.959	22-12-2016	48	73	68	676	1200
*2	PONG DAM	423.67	409.32	6.157	2.894	22-12-2016	47	57	53	-	360
<u>PUNJAB</u>											
*3	THEIN	527.91	506.28	2.344	0.939	22-12-2016	40	29	48	348	600
<u>RAJASTHAN</u>											
*4	MAHI BAJAJ SAGAR	280.75	279.20	1.711	1.510	22-12-2016	88	71	66	63	140
5	JHAKAM	359.50	356.30	0.132	0.101	22-12-2016	77	58	59	28	-
*6	RANA PRATAP SAGAR	352.81	348.42	1.436	0.645	21-12-2016	45	31	53	229	172
<u>EASTERN REGION</u>											
<u>JHARKHAND</u>											
7	TENUGHAT	269.14	260.22	0.821	0.426	22-12-2016	52	43	43	-	-
8	MAITHON	146.3	148.73	0.471	0.471	22-12-2016	100	33	85	342	-
*9	PANCHET HILL	124.97	127.17	0.184	0.184	22-12-2016	100	22	85	\$	80
10	KONAR	425.81	425.21	0.176	0.165	22-12-2016	94	69	77	\$	-
11	TILAIYA	368.81	368.98	0.142	0.142	22-12-2016	100	67	73	\$	4
<u>ODISHA</u>											
*12	HIRAKUD	192.02	191.64	5.378	4.581	22-12-2016	85	72	83	153	307
*13	BALIMELA	462.08	458.91	2.676	2.100	21-12-2016	78	68	61	-	360
14	SALANADI	82.30	68.89	0.558	0.194	22-12-2016	35	6	41	42	-
*15	RENGALI	123.50	122.69	3.432	3.166	21-12-2016	92	52	67	3	200
*16	MACHKUND(JALPUT)	838.16	835.79	0.893	0.694	21-12-2016	78	78	81	-	115
*17	UPPER KOLAB	858.00	856.42	0.935	0.785	21-12-2016	84	81	60	89	320
*18	UPPER INDRAVATI	642.00	639.00	1.456	1.136	22-12-2016	78	51	71	128	600
<u>WEST BENGAL</u>											
19	MAYURAKSHI	121.31	115.29	0.480	0.218	22-12-2016	45	21	44	227	-
20	KANGSABATI	134.14	129.89	0.914	0.572	22-12-2016	63	25	41	341	-
<u>TRIPURA</u>											
21	GUMTI	93.55	91.70	0.312	0.228	21-12-2016	73	78	37	-	15
<u>WESTERN REGION</u>											
<u>GUJARAT</u>											
*22	UKAI	105.16	102.46	6.615	5.217	20-12-2016	79	54	69	348	300
23	SABARMATI(DHAROI)	189.59	187.66	0.735	0.555	22-12-2016	76	66	57	95	1
*24	KADANA	127.7	126.65	1.472	1.083	22-12-2016	74	46	65	200	120
25	SHETRANJI	55.53	53.52	0.300	0.166	22-12-2016	55	82	70	36	-
26	BHADAR	107.89	101.01	0.188	0.016	22-12-2016	9	41	55	27	-
27	DAMANAGANGA	79.86	78.35	0.502	0.409	20-12-2016	81	80	87	51	1
28	DANTIWADA	184.1	170.98	0.399	0.059	22-12-2016	15	58	32	45	-
29	PANAM	127.41	125.40	0.697	0.424	22-12-2016	61	37	65	36	2
*30	SARDAR SAROVAR	121.92	119.59	1.566	1.159	20-12-2016	74	48	77	2120	1450
31	KARJAN	115.25	107.56	0.523	0.314	20-12-2016	60	51	83	51	3

WEEKLY REPORT OF 91 IMPORTANT RESERVOIRS OF INDIA

GOVERNMENT OF INDIA

CENTRAL WATER COMMISSION

WEEK ENDING :- 22.12.2016

S. NO	NAME OF RESERVOIR	FRL (m)	CURRENT RESERVOIR LEVEL (m)	LIVE CAPACITY AT FRL (BCM)	CURRENT LIVE STORAGE (BCM)	DATE	STORAGE AS % OF LIVE CAPACITY AT FRL			BENEFITS	
							CURRENT YEAR	LAST YEAR	LAST 10 YEARS AVERAGE	IRR. (CCA) IN TH. HA	HYDEL IN MW
1	2	4	6	5	7	8	9	10	11	3A	3B
MAHARASHTRA											
32	JAYAKWADI(PAITHON)	463.91	462.24	2.171	1.570	22-12-2016	72	10	47	227	-
*33	KOYANA	657.90	653.06	2.652	2.011	21-12-2016	76	57	84	-	1920
34	BHIMA(UJJANI)	496.83	496.79	1.517	1.504	21-12-2016	99	0	71	125	12
35	ISAPUR	441.00	434.31	0.965	0.416	21-12-2016	43	22	56	104	-
36	MULA	552.30	550.78	0.609	0.530	22-12-2016	87	25	66	139	-
37	YELDARI	461.77	454.20	0.809	0.224	22-12-2016	28	7	40	78	-
38	GIRNA	398.07	395.80	0.524	0.397	21-12-2016	76	4	43	79	-
39	KHADAKVASLA	582.47	580.31	0.056	0.029	21-12-2016	52	41	54	78	8
*40	UPPER VAITARNA	603.50	602.65	0.331	0.304	21-12-2016	92	56	85	-	61
41	UPPER TAPI	214.00	213.55	0.255	0.234	21-12-2016	92	80	90	45	-
*42	PENCH (TOTALADOH)	490.00	480.34	1.091	0.427	21-12-2016	39	46	55	127	160
43	UPPER WARDHA	342.50	340.84	0.564	0.424	22-12-2016	75	62	73	70	-
44	BHATSA	142.07	135.56	0.942	0.773	21-12-2016	82	68	79	29.378	15
45	DHOM	747.70	743.22	0.331	0.286	21-12-2016	86	45	69	36.2	2
46	DUDHGANGA	646.00	642.57	0.664	0.566	21-12-2016	85	54	84	2.441	24
47	MANIKDOH (KUKADI)	711.25	702.90	0.288	0.157	21-12-2016	55	17	44	2.2	6
48	BHANDARDARA	744.91	744.45	0.304	0.297	21-12-2016	98	29	78	63.74	46
CENTRAL REGION											
UTTAR PRADESH											
49	MATATILA	308.46	305.29	0.707	0.325	21-12-2016	46	63	56	-	30
*50	RIHAND	268.22	263.69	5.649	3.704	22-12-2016	66	33	39	-	300
UTTRAKHAND											
*51	RAMGANGA	365.30	349.50	2.196	1.151	22-12-2016	52	63	67	1897	198
*52	TEHRI	830.00	811.85	2.615	1.894	22-12-2016	72	65	69	2351	1000
MADHYA PRADESH											
*53	GANDHI SAGAR	399.90	398.74	6.827	5.917	22-12-2016	87	77	50	220	115
54	TAWA	355.40	351.80	1.944	1.419	22-12-2016	73	65	70	247	-
*55	BARGI	422.76	419.75	3.180	2.380	22-12-2016	75	78	71	157	90
*56	BANSAGAR	341.64	340.16	5.166	4.506	22-12-2016	87	51	56	488	425
*57	INDIRA SAGAR	262.13	259.79	9.745	7.771	22-12-2016	80	63	54	2380	1000
58	BARNA	348.55	346.72	0.456	0.337	22-12-2016	74	50	52	546	-
CHHATTIS GARH											
*59	MINIMATA BANGOI	359.66	354.81	3.046	2.104	22-12-2016	69	45	63	-	120
60	MAHANADI	348.70	348.63	0.767	0.760	21-12-2016	99	48	77	319	10
SOUTHERN REGION											
A.P. & TG											
*61	SRISAILAM	269.75	264.60	8.288	3.687	21-12-2016	44	18	61	0	770
*62	NAGARJUNA SAGAR	179.83	159.75	6.841	0.713	21-12-2016	10	0	47	895	810
ANDHRA PRADESH											
63	SOMASILA	100.58	93.74	1.994	1.084	21-12-2016	54	91	73	168	0
TELANGANA											
64	SRIRAMSAGAR	332.54	331.68	2.300	2.182	22-12-2016	95	8	51	411	27
65	LOWER MANAIR	280.42	279.03	0.621	0.574	22-12-2016	92	16	66	199	60

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							CURRENT YEAR	LAST YEAR	LAST 10 YEARS AVERAGE	IRR. (CCA) IN TH. HA	HYDEL IN MW
1	2	4	6	5	7	8	9	10	11	3A	3B
KARNATAKA											
66	KRISHNARAJA SAGRA	752.50	738.62	1.163	0.172	22-12-2016	15	60	72	79	-
*67	TUNGABHADRA	497.74	484.06	3.276	0.241	21-12-2016	7	24	57	529	72
68	GHATAPRABHA	662.95	655.06	1.391	0.859	22-12-2016	62	26	55	317	-
69	BHADRA	657.76	645.02	1.785	0.605	22-12-2016	34	58	87	106	39
70	LINGANAMAKKI	554.43	546.05	4.294	2.165	19-12-2016	50	52	74	-	55
71	NARAYANPUR	492.25	488.39	0.863	0.321	21-12-2016	37	43	81	425	-
72	MALAPRABHA(RENUKA)	633.83	624.98	0.972	0.190	22-12-2016	20	14	47	215	-
73	KABINI(Sancherla Tank)	696.16	689.32	0.444	0.115	22-12-2016	26	36	31	85	-
74	HEMAVATHY	890.63	873.28	0.927	0.105	22-12-2016	11	15	39	265	-
75	HARANGI	871.42	859.02	0.220	0.059	22-12-2016	27	2	13	53	-
76	SUPA	564.00	545.38	4.120	2.178	19-12-2016	53	44	63	-	-
77	VANIVILAS SAGAR	652.28	633.47	0.802	0.033	22-12-2016	4	13	19	123	-
*78	ALMATTI	519.60	516.27	3.105	1.803	21-12-2016	58	14	61	@	290
*79	GERUSOPPA	55.00	50.82	0.130	0.106	22-12-2016	82	72	80	83	240
KERALA											
80	KALLADA(PARAPPAR)	115.82	100.89	0.507	0.202	22-12-2016	40	91	84	62	-
*81	IDAMALAYAR	169.00	153.66	1.018	0.600	22-12-2016	59	56	72	33	75
*82	IDUKKI	732.43	713.96	1.460	0.576	22-12-2016	39	59	68	-	780
*83	KAKKI	981.46	967.26	0.447	0.248	22-12-2016	55	75	82	23	300
*84	PERIYAR	867.41	859.68	0.173	0.020	22-12-2016	12	100	65	84	140
85	MALAPMUZHA	115.06	106.21	0.224	0.067	22-12-2016	30	50	67	21	3
TAMIL NADU											
86	LOWER BHAWANI	278.89	262.50	0.792	0.102	22-12-2016	13	54	65	105	8
*87	METTUR(STANLEY)	240.79	215.85	2.647	0.316	22-12-2016	12	66	63	122	360
88	VAIGAI	279.20	264.94	0.172	0.005	22-12-2016	3	77	58	61	6
89	PARAMBIKULAM	556.26	539.88	0.380	0.077	22-12-2016	20	72	81	101	-
90	ALIYAR	320.04	303.60	0.095	0.008	22-12-2016	8	97	83	#	60
*91	SHOLAYAR	1002.79	958.22	0.143	0.000	22-12-2016	0	29	59	-	95
TOTAL FOR 91 RESERVOIRS				157.799	95.342						
PERCENTAGE							60	48	61		

Sd/-

* HYDEL POWER CAPACITY HAVING CAPACITY MORE THAN 60MW

Director

\$ TOTAL CCA 342 TH. HA OF DVC SYSTEM

W. M. , CWC

TOTAL CCA 101 TH. HA OF PARAMBIKULAM & ALIYAR

@ TOTAL CCA 425 TH. HA. OF NARAYANPUR AND ALMATTI

† SABARMATI RESERVOIR IS SUPPLEMENTED WITH NARMADA WATER THROUGH PIPELINE.

Sl. No. 30th The FRL of S.S.P. 138.38 M and Live capacity at FRL will be 5.760 BCM. However at present the lowest block of the dam is at the level of 121.92 M. and the live capacity at this level is 1.566 BCM